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ART UNIT		PAPER NUMBER		
2474				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/717,521	HO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	FEBEN HAILE	2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 August 2008.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-37 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____ .                        |

**DETAILED ACTION**

***Continued Examination***

1. In view of the Appeal Brief filed on August 22, 2008, PROSECUTION IS HEREBY REOPENED. Due to a missing rejection of claim 37, a new Non-Final rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Aung S. Moe/

Supervisory Patent Examiner, Art Unit 2474.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 8-12, 14-17, 19-24, 26-29, and 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. (US 2004/0083284), hereinafter referred to as Ofek, in view of Liu et al. (US 7,197,660), hereinafter referred to as Liu.

**Regarding claims 1**, Ofek discloses discovering a topology object model of the routers (**page 2 paragraph 0021; network topologies are determined and objects corresponding to elements in a domain are stored in a Topology Object Model**); detecting a condition (**page 2 paragraph 0021; a change in the status of an element is recorded in an associated entity object**); and displaying an indication of the detected condition (**page 2 paragraph 0021; information contained in the Topology Object Model is graphically displayed**).

Ofek fails to explicitly suggest detecting a condition *of the at least one backup router group based on at least one threshold value*.

Liu teaches detecting a condition of the at least one backup router group based on at least one threshold value (**a cluster of devices, i.e. figure 1 element 110, comprising a recovery system, i.e. figure 2, with a redundancy group, i.e. column 4 lines 21-30, for detecting failure within the cluster according to a threshold parameter, i.e. column 5 lines 17-25**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the recovery method taught by Liu into the system for providing data awareness disclosed by Ofek. The motivation for such a modification

is the ability to respond quickly to failures without compromising throughput and interrupting service.

**Regarding claim 3**, Liu discloses wherein the detecting is also based on a number of backup router groups to which one of the routers belongs (**column 8 lines 49-51; each device may act as a master in one redundancy group while simultaneously serving as a backup in another redundancy group**).

**Regarding claim 4**, Ofek discloses at least one network router node (**page 2 paragraph 0021; topology of elements in a network**); at least one network interface for each at least one network router node (**page 2 paragraph 0023; physical representation such as a network interface card**); at least one address for each at least one network interface (**figure 4; element IP address**).

Liu teaches a state of each one of the at least one address that is internal to the backup router group (**figure 5 elements 510-530; state information of redundancy group, i.e. master and backup devices**); and any tracked interfaces associated with each one of the at least one address that is internal to the backup router (**column 6 lines 40-44; each device maintains an IP interface**).

**Regarding claim 5**, Liu discloses a state of at least one of the at least one address that is external to the backup router group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

**Regarding claim 6**, Liu discloses wherein the detecting is also based on a state of at least one of the at least one address that is external to the backup router group

**(column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures).**

**Regarding claim 9**, Ofek discloses receiving status information from the routers (page 2 paragraph 0021; **a change in the status of an element**); and updating the topology object model to reflect the received status information (page 2 paragraph 0021; **the status is recorded in the Topology Object Model**).

**Regarding claim 10**, Liu discloses wherein the status information includes states associated with interface addresses within the at least one backup router group (column 5 lines 17-25; **detecting failures of devices within the group**).

**Regarding claim 11**, Liu discloses wherein the status information includes status of tracked interfaces associated with routers organized in the at least one backup router group (column 5 lines 17-25; **detecting failures of devices within the group**).

**Regarding claim 12**, Ofek discloses means for discovering a topology object model of the routers (page 2 paragraph 0021; **network topologies are determined and objects corresponding to elements in a domain are stored in a Topology Object Model**); detecting a condition (page 2 paragraph 0021; **a change in the status of an element is recorded in an associated entity object**); and means for displaying an indication of the detected condition (page 2 paragraph 0021; **information contained in the Topology Object Model is graphically displayed**).

Ofek fails to explicitly suggest means for detecting a condition *of the at least one backup router group based on at least one threshold value*.

Liu teaches means for detecting a condition of the at least one backup router group based on at least one threshold value (**a cluster of devices, i.e. figure 1 element 110, comprising a recovery system, i.e. figure 2, with a redundancy group, i.e. column 4 lines 21-30, for detecting failure within the cluster according to a threshold parameter, i.e. column 5 lines 17-25**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the recovery method taught by Liu into the system for providing data awareness disclosed by Ofek. The motivation for such a modification is the ability to respond quickly to failures without compromising throughput and interrupting service.

**Regarding claim 14**, Liu discloses wherein the detecting is also based on a number of backup router groups to which one of the routers belongs (**column 8 lines 49-51; each device may act as a master in one redundancy group while simultaneously serving as a backup in another redundancy group**).

**Regarding claim 15**, Ofek discloses at least one network router node (**page 2 paragraph 0021; topology of elements in a network**); at least one network interface for each at least one network router node (**page 2 paragraph 0023; physical representation such as a network interface card**); at least one address for each at least one network interface (**figure 4; element IP address**).

Liu teaches a state of each one of the at least one address that is internal to the backup router group (**figure 5 elements 510-530; state information of redundancy group, i.e. master and backup devices**); and any tracked interfaces associated with

each one of the at least one address that is internal to the backup router (**column 6 lines 40-44; each device maintains an IP interface**).

**Regarding claim 16**, Liu discloses a state of at least one of the at least one address that is external to the backup router group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

**Regarding claim 17**, Liu discloses wherein the detecting is also based on a state of at least one of the at least one address that is external to the backup router group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

**Regarding claim 20**, Ofek discloses means receiving status information from the routers (**page 2 paragraph 0021; a change in the status of an element**); and updating the topology object model to reflect the received status information (**page 2 paragraph 0021; the status is recorded in the Topology Object Model**).

**Regarding claim 21**, Liu discloses wherein the status information includes states associated with interface addresses within the at least one backup router group (**column 5 lines 17-25; detecting failures of devices within the group**).

**Regarding claim 22**, Liu discloses wherein the status information includes status of tracked interfaces associated with routers organized in the at least one backup router group (**column 5 lines 17-25; detecting failures of devices within the group**).

**Regarding claim 23**, Ofek discloses the means discovering also receives status information from the routers and updates the topology object model to reflect the

received status information (**page 2 paragraph 0021; a change in the status of an element is recorded in the Topology Object Model**).

**Regarding claim and 24**, Ofek discloses discovering a topology object model of the routers (**page 2 paragraph 0021; network topologies are determined and objects corresponding to elements in a domain are stored in a Topology Object Model**); detecting a condition (**page 2 paragraph 0021; a change in the status of an element is recorded in an associated entity object**); and displaying an indication of the detected condition (**page 2 paragraph 0021; information contained in the Topology Object Model is graphically displayed**).

Ofek fails to explicitly suggest detecting a condition *of the at least one backup router group based on at least one threshold value*.

Liu teaches detecting a condition of the at least one backup router group based on at least one threshold value (**a cluster of devices, i.e. figure 1 element 110, comprising a recovery system, i.e. figure 2, with a redundancy group, i.e. column 4 lines 21-30; for detecting failure within the cluster according to a threshold parameter, i.e. column 5 lines 17-25**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the recovery method taught by Liu into the system for providing data awareness disclosed by Ofek. The motivation for such a modification is the ability to respond quickly to failures without compromising throughput and interrupting service.

**Regarding claim 26**, Liu discloses wherein the detecting is also based on a number of backup router groups to which one of the routers belongs (**column 8 lines 49-51; each device may act as a master in one redundancy group while simultaneously serving as a backup in another redundancy group**).

**Regarding claim 27**, Ofek discloses at least one network router node (**page 2 paragraph 0021; topology of elements in a network**); at least one network interface for each at least one network router node (**page 2 paragraph 0023; physical representation such as a network interface card**); at least one address for each at least one network interface (**figure 4; element IP address**).

Liu teaches a state of each one of the at least one address that is internal to the backup router group (**figure 5 elements 510-530; state information of redundancy group, i.e. master and backup devices**); and any tracked interfaces associated with each one of the at least one address that is internal to the backup router (**column 6 lines 40-44; each device maintains an IP interface**).

**Regarding claim 28**, Liu discloses a state of at least one of the at least one address that is external to the backup router group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

**Regarding claim 29**, Liu discloses wherein the detecting is also based on a state of at least one of the at least one address that is external to the backup router group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

**Regarding claim 32**, Ofek discloses receiving status information from the routers (**page 2 paragraph 0021; a change in the status of an element**); and updating the topology object model to reflect the received status information (**page 2 paragraph 0021; the status is recorded in the Topology Object Model**).

**Regarding claim 33**, Liu discloses wherein the status information includes states associated with interface addresses within the at least one backup router group (**column 5 lines 17-25; detecting failures of devices within the group**).

**Regarding claim 34**, Liu discloses wherein the status information includes status of tracked interfaces associated with routers organized in the at least one backup router group (**column 5 lines 17-25; detecting failures of devices within the group**).

**Regarding claim 35**, Ofek discloses at least one network node object representing an element in the network (**page 2 paragraph 0021; network topologies are determined and objects corresponding to elements in a domain are stored in a Topology Object Model**); at least one network interface object for each at least one network node object, the at least one network interface object representing an interface of the network element corresponding to the each at least one network node object (**page 2 paragraph 0023; the Topology Object Model include a physical element representation such as a network interface card**); an address object for each at least one network interface object, representing an address of the corresponding interface (**figure 4; the Topology Object Model include an elements IP address**).

Ofek fails to explicitly suggest a backup routing protocol group object representing network elements organized in a backup routing protocol group, the

backup routing protocol group object including a virtual address of the backup routing protocol group and real addresses of the network elements in the backup routing protocol group; and an address state object for each of the real addresses of the network elements in the backup routing protocol group, including a state of the corresponding address.

Liu teaches a backup routing protocol group object representing network elements organized in a backup routing protocol group (**a cluster of devices, i.e. figure 1 element 110, comprising a recovery system, i.e. figure 2, with a redundancy group, i.e. column 4 lines 21-30**), the backup routing protocol group object including a virtual address of the backup routing protocol group and real addresses of the network elements in the backup routing protocol group (**each device has its own IP and MAC address, i.e. column 10 lines 36-34**); and an address state object for each of the real addresses of the network elements in the backup routing protocol group, including a state of the corresponding address (**figure 5 elements 510-530; state information of redundancy group**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the recovery method taught by Liu into the system for providing data awareness disclosed by Ofek. The motivation for such a modification is the ability to respond quickly to failures without compromising throughput and interrupting service.

**Regarding claim 36**, Liu discloses a track interface object corresponding to a tracked network interface of a first network element in the backup routing protocol group

wherein the tracked network interface is located between the first network element and a network element outside the backup routing protocol group (**column 5 lines 11-16; detecting failures such link connectivity due to cable or port failures**).

Regarding claim 37, Ofek discloses each network node object is related to one or more network interface objects (**page 2 paragraph 0023; elements modeled include physical representation such as a network interface card**); each network interface object is related to one or more address objects (**figure 4; element IP address**); and each address object is related to one or more network interface objects (**figure 4; number of ports and node WWN**).

Liu teaches the backup routing protocol group is related to one or more network node objects (**column 4 lines 21-30; a cluster of security devices comprising a recovery system with a redundancy group**); the backup routing protocol group is related to one or more address objects (**column 10 lines 36-34; each security device has its own IP and MAC address**); each network node object is related to one or more backup routing protocol group objects (**column 4 lines 33-36; each security device can be designated as a master device for one redundancy group and a backup device for a different redundancy group**).

3. Claims 2, 7, 13, 18, 25, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. (US 2004/0083284), in view of Liu et al. (US 7,197,660), and further in view of Yip et al. (US 6,954,436), hereinafter referred to as Yip.

**Regarding claim 2**, Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the at least one threshold value includes a minimum number of available routers in a backup router group.

Yip teaches the at least one threshold value includes a minimum number of available routers in a backup router group (**column 4 lines 30-40; ping tracking parameter representative of active routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 7**, Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the condition is a minimum number of functional routers available in a corresponding backup router group.

Yip teaches wherein the condition is a minimum number of functional routers available in a corresponding backup router group (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 8**, Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the condition is a minimum of functional routers available only in a corresponding backup router group.

Yip teaches wherein the condition is a minimum of functional routers available only in a corresponding backup router group (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 13**, Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the at least one threshold value includes a minimum number of available routers in a backup router group.

Yip teaches wherein the at least one threshold value includes a minimum number of available routers in a backup router group (**column 4 lines 30-40; ping tracking parameter representative of active routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 18,** Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the condition is a minimum number of functional routers available in a corresponding backup router group.

Yip teaches a method for using a standby router protocol to determine the routers position as master or slave according to parameters such as a metric of the state of the functionality of the router (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers

taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 19**, Ofek as modified by Liu disclose the limitations of the base claims.

Yip teaches a method for using a standby router protocol to determine the routers position as master or slave according to parameters such as a metric of the state of the functionality of the router (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 25**, Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the at least one threshold value includes a minimum number of available routers in a backup router group.

Yip teaches a method for using a standby router protocol to determine the routers position as master or slave according to parameters such as a metric of active

routers (**column 4 lines 30-40; ping tracking parameter representative of active routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 30,** Ofek as modified by Liu disclose the limitations of the base claims.

However, Ofek, Liu, and/or their combination fail to explicitly suggest wherein the condition is a minimum number of functional routers available in a corresponding backup router group.

Yip teaches a method for using a standby router protocol to determine the routers position as master or slave according to parameters such as a metric of the state of the functionality of the router (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

**Regarding claim 31,** Ofek as modified by Liu disclose the limitations of the base claims.

Yip teaches a method for using a standby router protocol to determine the routers position as master or slave according to parameters such as a metric of the state of the functionality of the router (**column 4 lines 50-51; diagnostic parameter representative of the functionality of routers).**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate method of using tracking to select redundant routers taught by Yip into the system for providing data awareness disclosed by Ofek as modified by the recovery method suggested by Liu. The motivation for such a modification is avoiding erroneously selection of a router that cannot communicate.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FEBEN HAILE whose telephone number is (571)272-3072. The examiner can normally be reached on 10:00 am-6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/  
Supervisory Patent Examiner, Art Unit 2474

/FEBEN HAILE/  
Examiner, Art Unit 2474